

REDISCOVERY AND FURTHER DESCRIPTION OF THE BEE *LEIOPROCTUS*
(*NOTOCOLLETES*) *HETERODOXUS* (COCKERELL)
(HYMENOPTERA: COLLETINAE)

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Abstract

Specimens of both sexes of the bee, *Leioproctus* (*Notocolletes*) *heterodoxus* (Cockerell), formerly known only from the unique male holotype, were collected near Lakes Albert and Alexandrina in South Australia. A description of the female and figures of the male terminalia are provided.

Introduction

The species here concerned was described by Cockerell (1916) from a single male specimen in the British Museum (Natural History), London. The specimen was labelled "Gawter D. S. Austr." which Cockerell interpreted as meaning that it had come from the Gawler Ranges, S. Aust.

A new genus, *Notocolletes*, erected by Cockerell to contain the species, was distinguished by the venation (only two cubital cells in fore wing), the dull, finely sculptured integument, the slender body form and long appendages, and the modifications of the tarsi, the hind basitarsi being extraordinarily attenuated and curved. Michener (1965) reduced *Notocolletes* to a subgenus of *Leioproctus* Smith and remarked on its similarity to the subgenus *Euryglossidia* Cockerell.

On September 16, 1973, both sexes of the bee were collected as they visited flowers of Cape Dandelion (*Cryptostemma calendula*) at two localities in pasture country near Lakes Albert and Alexandrina (approx. 80 km SE of Adelaide). Rediscovery of the species in this area throws doubt on the type locality being the Gawler Ranges (approx. 450 km to the NW) where the rainfall is far lower and the vegetation quite different. I believe the type's label was meant to convey "Gawler District, S. Aust.", Gawler being only about 110 km from the new localities and having a more comparable rainfall and ecology.

***Leioproctus* (*Notocolletes*) *heterodoxus* (Cockerell)**

Description of female

Body length about 9 mm; head broad; vertex slightly elevated; compound eyes slightly converging below; facial foveae virtually absent; frons with median carina failing to reach median ocellus; supraclypeal-interantennal area moderately protuberant; clypeus smooth, gently convex; mandibles elongate, bidentate, almost as long as eyes; scapes slender, extending beyond median ocellus; flagella moderately long, 1.2x as long as eyes, the middle segments longer than broad; thorax and metasoma no more slender than usual in *Leioproctus*; broad, round-tipped pygidial plate largely hidden by dense preanal fimbria; legs unmodified; basitibial plates large, fully defined and setose; inner hind tibial spurs coarsely pectinate with 4-6 strong teeth; tarsal claws cleft.

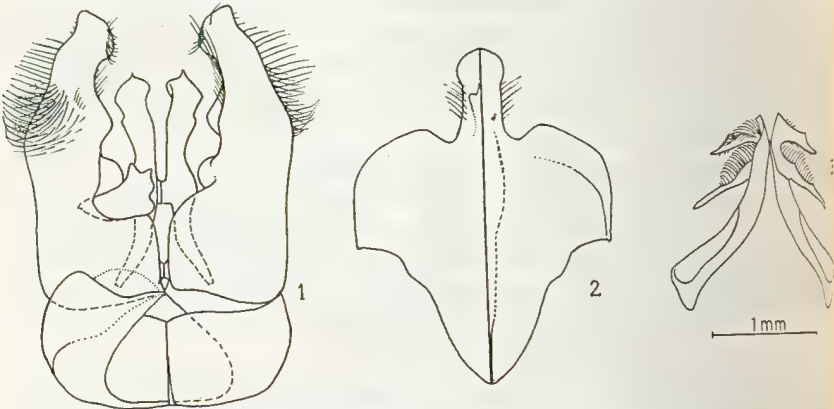
Lower face weakly shining, lineolate with sparse pitting; frons and vertex dull with extremely fine sculpturing; thorax as in male;

metasomal terga dull basally with strong extremely fine sculpturing, but weakly shining more apically.

Head and thorax sparsely covered with long setae; metasoma with only sparse setae dorsally and no hair bands; metasomal sterna each with a transverse band of erect, strongly plumose setae; pubescence generally buff becoming white below body.

Face and thorax very weakly metallic green ventrolaterally; metasoma distinctly metallic green; integument otherwise black.

The female of *L. heterodoxus* agrees fully with the diagnosis of *Euryglossidia* given by Michener (1965, pp. 66, 68). The male agrees with most features of *Euryglossidia* including the form of the terminalia (Figs. 1-3) and differs significantly only in the modifications of the legs and the swellings of its metasomal sterna.



FIGS 1-3. *Leioproctus (Notocolletes) heterodoxus*, ♂. 1, genital capsule; 2, 8th sternum; 3, 7th sternum. All show dorsal view, r.h.s.; ventral view l.h.s.

Material examined

SOUTH AUSTRALIA: 7♂, 5♀, 11 km E of Narrung and 5♂, 1♀, Pelican Point, Coorong, all collected on Cape Dendelion on 16.ix.1973 by the author and deposited in the collections of the South Australian Museum, Adelaide, the British Museum (N.H.), London, and the author.

General Observations

Hundreds of the bees were observed visiting flowers of Cape Dendelion, an introduced and particularly abundant weed in agricultural areas of the state. The bees' flight was rather slow. Males patrolled the flowers, frequently stopping for nectar, and occasional attempts at copulation with feeding females were observed. At one locality, a short distance from the edge of Lake Albert, several females were observed entering their burrows in a flat bare area of dark, consolidated, loamy soil. The nests were not excavated.

Acknowledgements

I owe thanks to Dr. Elizabeth M. Exley, Department of Entomology, University of Queensland, Brisbane, for verifying the identification of my specimens by comparison with the holotype during a visit to the British

Museum. Mr. George Else of the Department of Entomology of the latter institution also very kindly compared specimens for me.

References

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THE REAPPEARANCE OF *ANAPHAEIS JAVA PERISTHENE* (BOISDUVAL) (LEPIDOPTERA: PIERIDAE) ON NORFOLK ISLAND

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 The Australian Museum and Norfolk Island

The appearance and disappearance of species on islands is an interesting phenomenon. This note records the reappearance of the pierid butterfly *Anaphaeis java peristhene* (Boisduval) on Norfolk Island after an apparent absence of over seventy years.

Olliff (1888) recorded *Pieris java* Sparr. from Norfolk Island. Hawkins (1943) listed 3 ♀ and 1 ♂ of *Anaphaeis java peristhene* in the British Museum from the island and considered that the Olliff specimens "could hardly be typical *java*". Olliff's specimens have not been traced and their identification cannot be confirmed. In reply to a request for label data from the specimens examined by Hawkins, Mr. R. I. Vane-Wright (*in lit.*) kindly provided the following information:

"Our old main collection of *java peristhene* does consist of 3 ♂ ♂ and 1 ♀ . . ." ". . . Hawkins more probably made a mistake in transcribing rather than in actually recognising the sexes. I now note that we have one further old specimen from Norfolk Island, a male in the Rothschild Collection *ex Distant* Collection—it bears no further data. It is almost certainly *late 19th century* in origin, . . . I doubt if any of our specimens were caught during the present century".

Hawkins' work was prompted in part by the acquisition of a sizeable collection of insects of many orders made by Mrs. I. McComish on Norfolk Island during 1939. Her material did not include specimens of *A. java peristhene* although it did include the four common butterfly species known from the island at that time. These are *Papilio ilioneus ilioneus* Don., *Cepora perimale perimale* (Don.), *Danaus plexippus* (L.) and *Zizina otis labradus* (Godart). The other eight species now known are less common there (two having been recorded only once) or they have been recorded for the first time since Hawkins' paper was published. These are *Graphium macleayanum* (Leach), *Anaphaeis java peristhene* (Boisd.), *Hypolimnas bolina* (L.), *Vanessa kershawi* (McCoy), *Vanessa itea* (Fabr.), *Precis villida calybe* (Godart), *Lampides boeticus* (L.) and *Melanitis leda bankia* (Fabr.). There seems to be no mention in the literature of *A. java* from Norfolk Island between Olliff (1888) and Hawkins (1943) and the latter refers only to 19th century specimens. Had the species been present during 1939 Mrs McComish would certainly have collected it. One of us (O.R.E.) has always been resident on the island and the other (C.N.S.) has made visits to the island each year from 1967-1971 (inclusive) covering various seasons of the year, but